

OLIVA
Serial No. 09/688,170

AMENDMENTS TO THE SPECIFICATION:

In the Substitute Specification submitted on December 27, 2002, please ensure that the paragraph extending from page 14, line 16 to page 15, line 10, reads as follows:

Fig. 1 schematically shows one of the prisms adapted to be incorporated in the device and/or refractive optical element 10 of the invention. From a theoretical point of view, it is possible to calculate the inclination angle α of each prism adapted to deflect a respective beam portion 5 by a predetermined angle β so as to illuminate and/or indicate a vertex of the framed reading area. With reference to Figs. 1 and 1a, with the horizontal δ_h and vertical δ_v view angles of the reader being known, the calculation of angle β is based on the following relation:

$$\tan \beta = \sqrt{\tan^2(\delta_h) + \tan^2(\delta_v)}$$

As:

$$\beta = \delta - \alpha = \arcsin[N \cdot \sin \alpha] - \alpha$$

where N is the refraction index of the material of the prism, and angle β being known, it is possible to obtain the angle at vertex α of the prism. Moreover, it is possible to obtain the orientation of the prism with respect to the optical axis Z so that an incident collimated light beam is deflected so as to univocally identify one of the vertices of the reading area 100, represented in Fig. 1 by angle γ by which it must be rotated with respect to axis Z. In fact, the angle γ is expressed by the following relation :

$$\cos \gamma = \frac{\tan \delta}{\tan \beta}$$

To identify the other three vertices of the reading area 100, it is sufficient to add three more prisms rotated by $-\gamma$, $\gamma+180^\circ$, $-(\gamma+180^\circ)$.